**Practice Final Exam**

**MPC 090**

This is a practice final exam. It is suggested you allot yourself 2 hours and take the practice exam under exam conditions. Each question is followed by a section number indicating where the subject matter is found in the text or handouts. Questions on this practice final exam may be different and include topics not found on the actual final exam and vice-versa. The actual final exam will contain 40 multiple choice questions, which count for 40% of the overall grade in MPC 090.

**The time and date of the exam are listed in the course schedule and will be announced in class.**

You must receive a score of 10 or better on both part A and part B, and 7 or better on Part C in order to enroll in any BBCC class for which MPC 090 is a prerequisite. You may retake the exam once (if needed) to prove competency for entrance into MPC 095 (Elementary Algebra) or other class that requires MPC 090, however, your score on the retake will not affect your grade in MPC 090.

The results of the final will be available in the Math/Science Resource Center. Results will not be given out over the phone-**you must pick up your results in person.**

Retake times will be available when you pick up your test results.

**IMPORTANT**

**The only items that you will be allowed to keep with you are a calculator, a couple of #2 pencils and an eraser. Scratch paper will be provided. All handbags, book bags, books, etc. will be left at the front of the testing room. It is** **recommended that you bring as little** **as possible with you.**

This sample final is designed to guide your review efforts. It is not intended to be the sole source of review. Be sure to refer back to the original course materials, handouts, and lecture notes for a complete review.

Answer Key

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Question | Answer |  | Question | Answer |
| 1 | A |  | 37 | C |
| 2 | C |  | 38 | B |
| 3 | C |  | 39 | D |
| 4 | C |  | 40 | B |
| 5 | A |  | 41 | C |
| 6 | B |  | 42 | B |
| 7 | B |  | 43 | B |
| 8 | A |  | 44 | C |
| 9 | B |  | 45 | C |
| 10 | D |  | 46 | A |
| 11 | C |  | 47 | C |
| 12 | C |  | 48 | C |
| 13 | C |  | 49 | A |
| 14 | A |  | 50 | D |
| 15 | D |  | 51 | B |
| 16 | A |  | 52 | A |
| 17 | A |  | 53 | C |
| 18 | B |  | 54 | C |
| 19 | D |  | 55 | B |
| 20 | D |  | 56 | D |
| 21 | B |  | 57 | B |
| 22 | A |  | 58 | A |
| 23 | A |  | 59 | C |
| 24 | C |  | 60 | B |
| 25 | A |  | 61 | B |
| 26 | D |  | 62 | D |
| 27 | B |  | 63 | A |
| 28 | A |  | 64 | B |
| 29 | A |  | 65 | A |
| 30 | B |  | 66 | B |
| 31 | C |  | 67 | C |
| 32 | B |  | 68 | D |
| 33 | A |  | 69 | D |
| 34 | C |  | 70 | A |
| 35 | B |  | 71 | D |
| 36 | C |  |  |  |

**Module A**

**No calculator allowed**

1. Simplify: –32 – 15 – + 41 – 10 [Section 2.2, 2.3 ]

A. 5 answer

B. –5

C. –37

D. 99

E. None of these

2. Simplify: [Section 2.1,2.2,2.3,2.4]

A. 8

B. –48

C. –18answer

D. 32

E. None of these

3. Simplify: 120 ÷ (–24) (–5) [Section 2.4, 2.5 ]

A. –25

B. 1

C. 25answer

D. undefined

E. None of these

4. Simplify: 2 – 8(7 + (– 10)) [Section 2.5]

A. 18

B. – 18

C. 26 answer

D. – 22

E. None of these

5. Simplify: – 22 + 8 **÷** (– 2) [Section 2.5]

A. – 26 answer

B. – 14

C. 7

D. – 18

E. None of these

6. Simplify: (– 24) **÷** 4 **** 6 – 8 **** 5 [Section 2.5]

A. – 40

B. – 76 answer

C. – 140

D. 0

E. None of these

7. Simplify: [Section 2.5 ]

A. –3

B. 0 answer

C.

D. undefined

E. None of these

8. Simplify: 15 – 6[10 + 2(16 – 27)] – 34 [Section 2.5 ]

A. 53 answer

B. 41

C. –142

D. –1222

E. None of these

9. How many terms are in the expression below? What is the second term?

6x2 – + 2xy2 – 4

A. 5 terms, second term is . [Section 2.6 ]

B. 4 terms, second term is – . answer

C. 6 terms, second term is x2

D. 4 terms, second term is –3

E. None of these

10. Evaluate the expression a2 – 2ab when a = –3 and b = 5 [Section 2.6 ]

A. –17

B. –8

C. 21

D. 39 answer

E. None of these

11. Combine like terms: 3x – 2x + y – 5y [Section 2.7 ]

A. 6y

B. – 4xy

C. x – 4y answer

D. 5x – 4y

E. None of these

12. Combine like terms: – 13w2 + 2x2 – 7wx + 3w2 – 10x [Section 2.7]

A. – 17w2x – 8x2

B. –25w5x4

C. – 10w2 + 2x2 – 7wx – 10x answer

D. 12w2x2 – 7wx – 10x

E. None of these

13. Combine like terms: 4ab – 6b2 + 3a + 2ab – 5a2 – 6ab + 4b2 [Section 2.7 ]

A. –2b2 – 2a3

B. –5a2 + 3a + ab – 2b2

C. –2b2 + 3a – 5a2 answer

D. –4ab

E. None of these

14. Multiply and simplify: 5(x2 – 2x + 4) + 12( –x2 + 3x + 2) [Section 2.7 ]

A. –7x2 + 26x + 44 answer

B. –7x2 – 46x + 8

C. –7x2 – 5x + 2

D. –7x2 – 35x – 14

E. None of these

15. Find the prime factorization of 1386 [Section 3.2 ]

A. 6∙7∙33

B. 1∙32∙6∙7∙11

C. 2∙3∙3∙6∙7∙11

D. 2∙32∙7∙11 answer

E. None of these

16. Reduce to lowest terms: [Section 3.5 ]

A. answer

B.

C. mq

D.

E. None of these

17. Simplify: **** [Section 3.6 ]

A. answer

B. 2

C.

D.

E. None of these

18. Simplify:  [Section 3.7 ]

A.

B. answer

C. 4h2

D.

E. None of these

19. Find the least common multiple (LCM) of 50a2b2, 60ab3c, and 45c2 [Section 4.1 ]

A. 27000a4b5c3

B. 30abc

C. 155a2b5c2

D. 900a2b3c2 answer

E. None of these

20. Simplify: [Section 4.2, 4.3 ]

A. 1

B.

C.

D. answer

E. None of these

21. Simplify: – + [Section 4.3 ]

A.

B. answer

C.

D.

E. None of these

22. Simplify: [Section 4.3 ]

A. answer

B.

C.

D.

E. None of these

23. Write an expression for the perimeter of the shape: [Section 4.4]

2x + 4

5

1 – x

3x – 2

A. 4x + 8 answer

B. 5x + 13

C. 6x + 13

D. –6x – 40

E. None of these

24. Simplify: 3– 8 [Section 4.6]

A. – 5

B. – 5

C. – 4 answer

D. 11

E. None of these

25. Simplify: – 7 – 6 [Section 4.6]

A. –14 answer

B. – 1

C. – 13

D. – 13

E. None of these

26. Simplify: 1 ÷ 2 [Section 4.7 ]

A. 2

B. 4

C.

D. answer

E. None of these

27. Simplify: [Section 4.6, 4.7 ]

A.

B. –15 answer

C. 11

D. –12

E. None of these

**Module B**

**Calculator allowed**

28. The bar graph shows the population of Mitchell, Nebraska from 1970 until 2000. About how much did the population of Mitchell increase between the years 1970 and 2000? [Section 6.1, 6.2 ]

A. 3500 people answer

Population  
(In thousands)

B. 1750 people

C. 7000 people

D. 2000 people

E. None of these

29. Find the mean of the numbers: 20, 27, 35, 29, 32, 27, 35, 27 [Section 6.5 ]

A. 29 answer

B. 28.6

C. 15

D. 234

E. None of these

30. Find the median of the numbers: 20, 27, 35, 29, 32, 27, 35, 27 [Section 6.5 ]

A. 27

B. 28 answer

C. 29

D. 30.5

E. None of these

31. Find the mode of the numbers: 20, 27, 35, 29, 32, 27, 35, 27 [Section 6.5 ]

A. 33

B. 35

C. 27 answer

D. There is no mode.

E. None of these

32. Juan earns the following grades during winter quarter. What is his GPA? [Section 6.5 ]

|  |  |  |
| --- | --- | --- |
| Course | Credits | Grade |
| Guitar | 2 | 3.1 |
| Chemistry | 5 | 3.4 |
| Shakespeare | 3 | 2.3 |
| Political Science | 5 | 3.8 |

A. 3.15

B. 3.27 answer

C. 3.75

D. 2.46

E. None of these

33. A company has 7 mechanics and 5 electricians. If an employee is selected at random, what is the probability that they are an electrician? [Section 6.6 ]

A. answer

B.

C.

D.

E. None of these

34. You can purchase a 12 fl oz bottle of window cleaner for $2.22 or an 18 fl oz bottle for $3.37. Which bottle of window cleaner is the better deal? What is the unit price of this bottle? [Section 7.2 ]

A. 18 fl oz bottle for 18.7¢ per fl oz

B. 18 fl oz bottle for 5.34¢ per fl oz

C. 12 fl oz bottle for 18.5¢ per fl oz answer

D. 12 fl oz bottle for 5.41¢ pr fl oz

E. None of these

35. A leaking pond loses 20 gallons of water in 7 hours. How many gallons of water will it lose in 48 hours?

A. 16.8 gal [Section 7.4 ]

B. 137.1 gal answer

C. 141.5 gal

D. 190 gal

E. None of these

36. Write in percent notation. Round your answer to the nearest hundredth of a percent.

A. 1.75% [Section 8.1 ]

B. 175%

C. 57.14% answer

D. 0.57%

E. None of these

37. 18 is 120% of what number? [Section 8.2, 8.3 ]

A. 39.6

B. 21.6

C. 15 answer

D. 6.7

E. None of these

38. 50 ml of acid is mixed with 60 ml of water. What percent acid is the final solution?

A. 120% [Section 8.4 ]

B. 45.5% answer

C. 54.5%

D. 83.3%

E. None of these

39. 62.5% of voters supported a recent school levy. If 14,400 people voted, how many supported the levy?

A. 2304 [Section 8.4 ]

B. 8640

C. 8862

D. 9000 answer

E. None of these

40. After a raise, Roberta’s salary increased from $32,000 annually to $33,920. Find the percent increase.

A. 5.7% [Section 8.4, 8.5 ]

B. 6% answer

C. 7%

D. 19.2%

E. None of these

41. The number of daily visitors to a website decreased 15% last month to 2720. How many daily visitors were there before the decrease? [Section 8.4, 8.5 ]

A. 3128

B. 2735

C. 3200 answer

D. 2312

E. None of these

42. Find the total cost of a $380 table that is discounted 35%, but subject to an 8.25% sales tax.

A. $470.68 [Section 8.5 ]

B. $267.38 answer

C. $353.25

D. $278.35

E. None of these

43. Find the interest earned if $5000 is invested at a 3.6% interest rate for 8 months.

A. $12,000 [Section 8.6 ]

B. $120 answer

C. $140

D. $1440

E. None of these

44. Marie invests $1500 in an account that earns 4.5% interest. Assuming that simple interest is calculated, how much interest will Marie earn in 9 months? [Section 8.6 ]

A. $607.50

B. $5062.5

C. $50.63 answer

D. $62.5

E. None of these

45. Convert 115 cm into ft [Section 9.1, 9.2, 9.4, 9.7 ]

A. 24.34 ft

B. 5.43 ft

C. 3.77 ft answer

D. 0.26 ft

E. None of these

46. Convert 160 into [Section 9.1, 9.2, 9.4, 9.7 ]

A. 0.02 answer

B. 5.88

C. 8.98

D. 1.45

E. None of these

47. Convert 1.2 L into in3. [Section 9.1, 9.2, 9.4, 9.7 ]

A. 472.44 in3

B. 0.02 in3

C. 73.22 in3 answer

D. 154.26 in3

E. None of these

48. Find the volume of a sphere that has a diameter of 7.4 cm. Use 3.14 for . (Answers have been rounded to the nearest tenth.)

A. 43.0 cm3 [Section 9.3, 9.4 ]

B. 146.5 cm3

7.4 cm

C. 212.1 cm3 answer

D. 248.6 cm3

E. None of these

49. Find the area. (Answers have been rounded to the nearest hundredth) [Section 9.3]

A. 26.69 cm2 answer

4 cm

B. 37.63 cm2

6.8 cm

4 cm

3.5 cm

C. 42 cm2

D. 32.06 cm2

10cm

E. None of these

50. Find the length of the missing side. Round your answer to the nearest hundredth. [Section 9.6 ]

15 in

8in

A. 7 in

B. 17 in

C. 16.1 in

D. 12.69 in answer

E. None of these

51. A weather report states that the temperature in Victoria, BC was 19C. What is the temperature in degrees Fahrenheit? [Section 9.7 ]

A. 40.6F

B. 66.2F answer

C. 42.6F

D. 52.4F

E. None of these

52. Multiply: (–12x4y3) (–7x5y2z) [Section 10.2 ]

A. 84x9y5z answer

B. –84x20y6

C. –19x9y5z

D. –12x5y3z

E. None of these

53. Multiply: –7ab3(–2a2b4 + ab2 – 5a4b3) [Section 10.2 ]

A. 14a3b12 + a2b6 – 35a4b9

B. 14a3b7 + 7 a2b5 – 35a5b6

C. 14a3b7 – 7a2b5 + 35a5b6 answer

D. 14a2b7 – 7ab5 + 35a4b6

E. None of these

54. Write –4.72 × 10–3 in standard notation. [Section 10.5 ]

A. 4720

B. –4720

C. –0.00472 answer

D. –0.000472

E. None of these

55. Write in Scientific Notation: 19,456 [Section 10.5 ]

A. 19.456 × 103

B. 1.9456 × 104 answer

C. 1.9456 × 103

D. 0.19456 × 10–5

E. None of these

**Module C**

56. Solve for r: 5r – 9 = 11r + 7 [Section 2.8, 5.7 ]

A. 1

B. 3

C. 22

D. answer

E. None of these

57. Solve for t: 3(t + 4) = 2(5 – 2t) + 9 [Section 2.8, 5.7 ]

A. 0

B. 1 answer

C. –

D. –20

E. None of these

58. Solve for x: [Section 4.4]

A. answer

B. –

C. 23

D. –3

E. None of these

59. Solve for y: 1.8(1.4y + 2) = –5y – 19.712 [Section 5.7 ]

A. 2.9

B. 3.5

C. –3.1 answer

D. –30.8

E. None of these

60. Solve for x: 

A. 3.37 [Section 7.3 ]

B. 0.76 answer

C. 12.16

D. 4.75

E. None of these

61. Solve for y. 3y + 4 = 2y – 7 [Section 5.7]

A. – 3

B. -11

C. 5

D. – 5

E. None of these

62. Solve for x. 3(x – 2) + 5 = 7(x + 3) – 7 [Section 2.8, 5.7]

A.

B. 1

C.

D. \*

E. None of these

63. Solve for x. x – 3 = x + 4 [Section 4.4]

A. 42

B.

C. 1

D. 7

E. None of these

64. Solve for b. 7.3b + 5.2 = 3.4b – 7 [Section 5.7]

A. 2.17

B. 3.13

C. 0.46

D. 1.14

E. None of these

65. Solve for x. 1.5(x – 3) = 7.8(x + 4) – 3.5 [Section 5.7]

A. 5.1

B. 0.5

C. 1.8

D. 1.5

E. None of these

66. Solve for x. = [Section 7.3]

A. 22.2

B. 4.44

C. 0.23

D. 2.03

E. None of these

67. Solve for x. 5x + 8 = 2x – 9 [Section 2.8, 5.7]

A.

B.

C.

D.

E. None of these\*\*\*\*\*\*\*

68. Solve for y. 15 = 7y + 3 [Section 4.4]

A.

B.

C. 5

D.

E. None of these

69. Solve for y. 9 = 4y – 3 [Section 4.4]

A.

B.

C.

D. 3

E. None of these

70. Solve for x. 7.4(2x – 1) + 3.5 = 2.7(x + 3) – 5 [Section 5.7]

A. 0.58

B. 1.73

C. 2.69

D. 0.37

E. None of these

71. Solve for x. x + = \* \*\* [Section 4.4]

A.

B. 2

C.

D. \*